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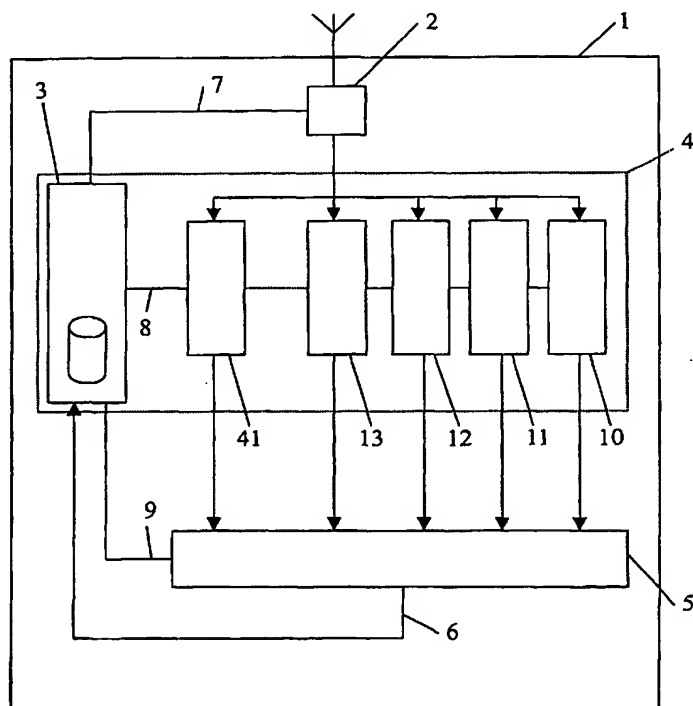
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(54) Title: **MOBILE TERMINAL FOR CELL SEARCHING VIA AN ITERATIVE CORRELATION SYSTEM**



(57) Abstract: Mobile terminals (1) for searching cells identified by code signals in Time Division - Synchronous Code Division Multiple Access (TD-SCDMA) telecommunication systems comprise correlation systems (4) for correlating input signals with stored code signals. The best correlation result defines the code signal used, which identifies the cell. By providing correlation systems (4) with controllers (3) for controlling correlation systems for performing iterative correlations and adapting correlation parameters per iterative correlation, the computational complexity is reduced much. Said correlation parameter corresponds with the length of code signals, which firstly is to be reduced and then per next iteration is to be increased, and/or with the number of code signals, which per next iteration is to be reduced. Said controllers (3) comprise comparators (5) for comparing correlation results for in dependence of comparison results adapting correlation parameters, and selectors (5) for in response to comparison results selecting a reduced number of code signals to be used for next correlations.



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## INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H04B1/707 H04B7/26

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 654 913 A (NOKIA MOBILE PHONES LTD) 24 May 1995 (1995-05-24) abstract; figures 4-6 column 3, line 30 - line 54 column 5, line 10 - line 46 column 7, line 13 - line 29	1-13
X	EP 1 130 794 A (MATSUSHITA ELECTRIC IND CO LTD) 5 September 2001 (2001-09-05) abstract; figures 1-3 column 1, line 14 - line 56 column 3, line 7 - column 4, line 55 --- -/--	1-13

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WANG Y-P E ET AL: "Cell search in W-CDMA" IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, IEEE SERVICE CENTER, PISCATAWAY, US, vol. 18, no. 8, August 2000 (2000-08), pages 1470-1482, XP002224578 ISSN: 0733-8716 the whole document -----</p>	1-13

# INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0654913	A	24-05-1995	US 5440597 A	08-08-1995
			CN 1116382 A	07-02-1996
			EP 0654913 A2	24-05-1995
			JP 7202753 A	04-08-1995
EP 1130794	A	05-09-2001	JP 2001244849 A	07-09-2001
			CA 2337682 A1	29-08-2001
			CN 1311615 A	05-09-2001
			EP 1130794 A2	05-09-2001
			US 2001019578 A1	06-09-2001